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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,018	03/31/2004	Chung-Kuang Lin	BHT-3118-45	3843

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EXAMINER

GRAYSAY, TAMARA L

ART UNIT	PAPER NUMBER
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3636

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/813,018

Applicant(s)

LIN ET AL.

Examiner

Tamara L. Graysay

Art Unit

3636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1, 2 and 9-11 are objected to because of the following informalities:

Claim 1, line 13: ~~[[the curvature radii]]~~ should be a curvature radii

Claim 2, line 3: ~~[[r]]~~ is a reference character that should be deleted or enclosed in parentheses.

Claim 9, line 4: ~~[[P]]~~ is a reference character that should be deleted or enclosed in parentheses.

Claims 10 and 11: Upon further consideration, inaccuracies have been found in claims 10 and 11 because claim 1 requires a plurality of reinforcing ribs radially recessed inwardly on *each* of the plurality of tubes. Therefore, the following changes are suggested to correct the inaccuracies of claims 10 and 11:

Claim 10, lines 2-3: ~~[[six]]~~ should be five and ~~[[to form a hexa-fold umbrella shaft]]~~ should be deleted.

Claim 11 should read: wherein said shaft further includes a sixth tube outward and lower of the outermost tube, the sixth tube is formed as a cylindrical shape without any reinforcing rib recessed therein, to form a hexa-fold umbrella shaft.

Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (DE-2961431) in view of Lin (US-6016822).

Claim 1: Wu discloses a multiple fold umbrella shaft (11,12,13,14) comprising: a plurality of hollow cylindrical tubes gradually increasing tube diameter (tube 11-13-14) and telescopically engageable along the central shaft longitudinal axis; each tube having reinforcing ribs (see cross section FIGS. 9 and 8) longitudinal formed, evenly distributed, and radially recessed inwardly (FIGS. 13, 14) with any two neighboring reinforcing ribs defining an equal central angle (e.g., 60 in FIGS. 13, 14) about the longitudinal axis (10); whereby upon assembly the inner tube reinforcing ribs are slidably engaged with the reinforcing ribs of the adjacent outer tube. Such an arrangement inherently prevents twisting and vibration of the tubes. The inwardly recessed ribs on the tubes inherently have centers of curvature that are aligned, otherwise the tubes could not move relative to one another. As depicted in FIGS. 9 and 8, the centers of the tubes are longitudinally aligned.

Wu is silent as to the space between adjacent tubes.

Lin teaches a telescoping umbrella shaft having a space between two adjacent tubes (e.g., FIG. 15). The space inherently creates an easier glide for the telescoping tubes because the less material in contact reduces the frictional forces thereby making the tubes telescope more smoothly and quickly without the need to add reduced friction material to the surfaces of the tubes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wu to include a space between the ribs, such as suggested

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by the gap in Lin, in order to minimize frictional contact of the adjacent tubes thereby making telescopic movement of the tubes more smooth and rapid.

Claim 2: The radius of curvature mentioned in Wu is within the range of  $1/2R$  to  $1/10R$  represented by the curved portion that extends into the radius of the tube a distance of  $H1$  to  $H2$  as depicted in FIGS. 13 and 14, respectively.

Claim 4: The reinforcing ribs are symmetrically or evenly distributed on the perimeter wherein the central angles are equal to 60 degrees. In other words, there are three "ribs" and three "non-ribs" with the central angle of 60 degrees between the "ribs." Applicant has not recited any structural distinction between the ribs and the central angle that would preclude the central angle also being curved inwardly.

3. Claims 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (DE-2961431) and Lin (US-6016822) as applied to claim 1 above, and further in view of Schultes (US-4687012).

Claim 6: Schultes suggests that an umbrella shaft designer may provide a telescoping shaft having one or more ribs spaced along the perimeter of the telescoping tubes (e.g., 4:18-39). So long as the ribs are limited to a number that will provide security against twisting, the number of ribs can vary in size and in distribution along the perimeter of the shaft. Providing two opposite ribs (as explicitly suggested by Schultes at 4:20) or providing four ribs is within the range of Schultes of one to ten ribs.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the six evenly distributed ribs of Wu to be, for example, four ribs separated by an central angles in order to protect against twisting and provide adequate guiding of the tubes as they telescope relative to each other.

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Claims 7 and 8: Schultes teaches a locking means at the lower portion of an inner tube wherein the locking means is in the tubes (3:24-28).

Claims 10-11: Schultes teaches a telescopic tube assembly having three tubes, but suggests that more than three tubes can be used (3:5-18). The examiner takes Official notice that the number of tubes is a matter of design choice within the folding umbrella art that is related to the compactness desired for the folding umbrella and the length of the shaft. In support of this position, see Lin (US-6035873), which depicts a four piece rib umbrella and five tubes. So in the case of a different number of rib pieces or a different length shaft, a different number of tubes would be best suited to achieve the desired compactness of the shaft to accommodate the folding ribs. Applicant has not disclosed any criticality or associated any unexpected result related to the number of tubes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Wu and Schultes combination to include six tubes, such as suggested by the “more than three tubes” of Schultes, in order to achieve a desired compactness for a multiple fold rib umbrella.

Claim 12: Schultes further teaches a “shortenable umbrella” which inherently includes a multiple-fold rib assembly.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (DE-29618431) Wu (DE-2961431), Lin (US-6016822) and Schultes (US-4687012) as applied to claim 8 above, and further in view of Vogel (US-2989968).

Claim 9: the combination of Wu and Schultes is silent as to the plug that cooperates with the locking ball and holes.

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Vogel teaches the use of a plug in cooperation with the locking ball and tube holes. The plug inherently urges the ball into the hole to fix the tubes relative to each other.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Wu and Schultes combination to include a plug for urging the locking ball in the tube hole, such as suggested by Vogel, in order to fix the tubes relative to each other.

### *Response to Arguments*

5. Applicant's arguments with respect to claims 1, 2, 4 and 6-10 have been considered but are moot in view of the new ground(s) of rejection.

In response to the diagram presented as representative Wu as applied in the rejection, the representation does not reflect the Wu reference because the claimed recesses are inward recesses (the inwardly oriented recesses located between the outwardly oriented portions), only a portion of the inward recess is depicted in the enlarged partial view on page 6 of the response.

In response to the argument that the claimed ribs of form no acute angled portion that may injure a user, the argument is not commensurate with the scope of the claim insofar as the acute angled portion is concerned. Moreover, for each tube having a reinforcing rib, the inward recess in applicant's invention results in a recess on the outer surface of the tubes. Therefore, the argument is not persuasive.

In response to the argument that the reinforcing ribs of the combination are not centered on the longitudinal axis of the central shaft, Wu depicts the inward recesses of the reinforcing ribs centered on the longitudinal axis of the central shaft 10.

In response to the argument that the combination lacks a tiny annular aperture homogeneously in between the two neighboring tubes, the combination of references and requisite motivation is explained in the above rejection(s).

In response to the argument that there is not the slightest suggestion that the references may be combined, the argument is not persuasive in that the suggestion and motivation is presented as being within the level of ordinary skill in the umbrella art, a notion that cannot be ignored when considering references and their teachings as a whole.

**Conclusion**

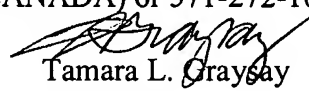
6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamara L. Graysay whose telephone number is 571-272-6728. The examiner can normally be reached on Mon - Fri from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Cuomo, can be reached on 571-272-6856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Tamara L. Graysay  
Examiner  
Art Unit 3636